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Foreword

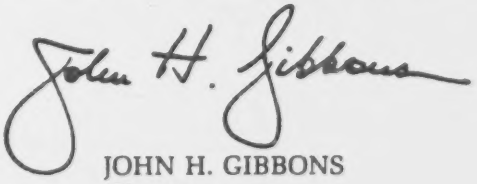
Part of a larger assessment of international competition in the service industries, the special report summarized here gives a quantitative overview of U.S. international trade in services and discusses policy options for improving Federal Government data on services trade—data now subject to major sources of error. OTA's full assessment report on competition in the services, requested by the Senate Committees on Governmental Affairs and Foreign Relations and the House Committee on Small Business, will examine a broader range of issues, including:

- services trade in the world economy, and linkages between the services and manufacturing;
- competitive dynamics in international banking services, engineering and construction, technical licensing, and telecommunications, data processing, information services, and computer software;
- U.S. employment in service industries; and
- U.S. and foreign government policies toward services and the new round of multilateral trade negotiations.

The special report summarized in this volume was prepared after the Senate Committee on Governmental Affairs requested separate publication of OTA's estimates of the impacts of services trade on the Nation's balance of payments. The Governmental Affairs Committee has expressed particular interest in the procedures used by Federal agencies for compiling such data, and the adequacy of the results for analyzing international competition in the services. The latter question is especially important given U.S. preparations for the next round of multilateral trade negotiations, scheduled to begin shortly under the auspices of the General Agreement on Tariffs and Trade.

In the special report, OTA examines alternative methods of defining and measuring international services trade—distinguishing, in particular, between direct exports (or imports) and the revenues of foreign affiliates of U.S. companies. The report estimates the level of U.S. international trade in services over the period 1982 to 1984, and compares these estimates with the official figures reported in the U.S. balance of payments.

OTA is grateful for the assistance provided by many individuals, inside and outside the Federal Government, during the preparation of this special report. Full responsibility for the contents rests with OTA.



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NOTE: OTA appreciates and is grateful for the valuable assistance and thoughtful critiques provided by the advisory panel members. The panel does not, however, necessarily approve, disapprove, or endorse this report. OTA assumes full responsibility for the report and the accuracy of its contents.

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Trade in Services: Exports and Foreign Revenues

Using data from government, industry, trade associations, the business press, and other sources, OTA has estimated the level of U.S. international service activity in 22 categories for the years 1982-84. OTA's estimates indicate that Federal Government balance of payments figures significantly understate both exports and imports of services. As much as half of the Nation's exports of services may escape the official statistics. The causes range from low rates of response on voluntary surveys to data categories that are conceptually flawed or outdated. (For example, the Nation's trade statistics make no explicit provision for computer software, one of the most critical service-related products in a high-technology economy.)

Although the responsible Federal agencies have been working to improve procedures for collecting data on trade in services, progress has been slow, impeded by concerns over added costs to both business and government. OTA's analysis, however, suggests that substantial improvements in the data on trade and investment in services would be possible at little or no additional cost. OTA's own estimates represent no more than 2 person-years of effort. The results reveal very large uncertainties. A relatively modest effort by the Federal Government could greatly reduce these uncertainties, narrowing the range of probable error and thereby providing more accurate data on the balance of trade in services. The benefits would include better understanding of the importance of service transactions relative to trade in goods and flows of capital in determining the Nation's overall trade position.

Thus far, U.S. preparations for the upcoming round of multilateral trade negotiations, where trade in services will be a major issue, have been hampered by a database that is not only incomplete but subject to substantial errors. Because the new trade round will probably extend into the 1990s, action now to revamp procedures for collecting and analyzing data on trade in services could help to support the evolving U.S. negotiating position. Such action would also aid U.S. negotiators in the bilateral discussions that have become a more prominent feature of the Nation's trade policy. On pages 15 to 21, OTA outlines specific options for improving the services database.

PRINCIPAL FINDINGS

1. *The current Federal Government system of reporting services in the balance of payments is subject to large errors.* These errors, much greater than those for trade in goods, arise in part from difficulties inherent in measuring production and trade in the services. Most services, as intangibles, cannot be stored, transported, or counted as they cross national borders. The historical origins of the services account as a residual category for all nongoods transactions create further sources of error. Procedures for data collection and estimation have not kept pace with the growth in volume and diversity of international service activity. (While the Federal Government collects trade statistics for about 10,000 categories of goods, the service account at its most disaggregated can be broken down into perhaps 40 categories.) Errors result from incomplete coverage of service activity, commingling of service transactions with investment income, misclassification of service activities, and the inability to assign value to some kinds of transactions.
2. Excluding banking (and services bundled with goods), OTA estimates that *the U.S. balance of payments understated exports of services by $25 to $47 billion in 1984* (table 1); nonbanking *imports of services were underreported by an estimated $16 to $33 billion.*[1] The official balance of payments figures for both exports and imports, as compiled by the Commerce Department's Bureau of Economic Analysis

[1]In fact, the underreporting in the current account is almost certainly greater; OTA's figures include only those service transactions which could be reliably estimated, and thus may not reflect the full impact of services on the balance of payments. Banking, in particular, has been excluded from these summary figures because Federal Government data on international banking does not permit separation of fee-for-service income from receipts and payments associated with foreign investment. The latter are conceptually quite different, and, in OTA's view, should not be considered as trade in services. Nor is it possible to estimate service exports from the United States by the U.S. affiliates of foreign firms in a number of service industries. For details, see *Chapter 2: Measuring International Service Activity*, in the special report.

"Services in the U.S. Balance of Payments, 1982-84: Documentation of OTA Estimates," July 1986, available from the National Technical Information Service (NTIS), presents OTA's estimating procedures and assumptions in detail.

Table 1.—Summary Comparisons of Balance of Payments and Foreign Revenues Figures for the Services[a] (in billions of current U.S. dollars)

	Exports	Imports	Balance	Overseas revenues of affiliates of U.S. firms	U.S. revenues of affiliates of foreign firms
Official U.S. Government figures:					
1983	$41.8	$35.4	$ 6.4	Not compiled	
1984	43.8	41.5	2.3		
OTA estimates:					
1983	$67-84	$52-66	$17[b]	$87-97	$69-75
1984	69-91	57-74	14[b]	Not available	

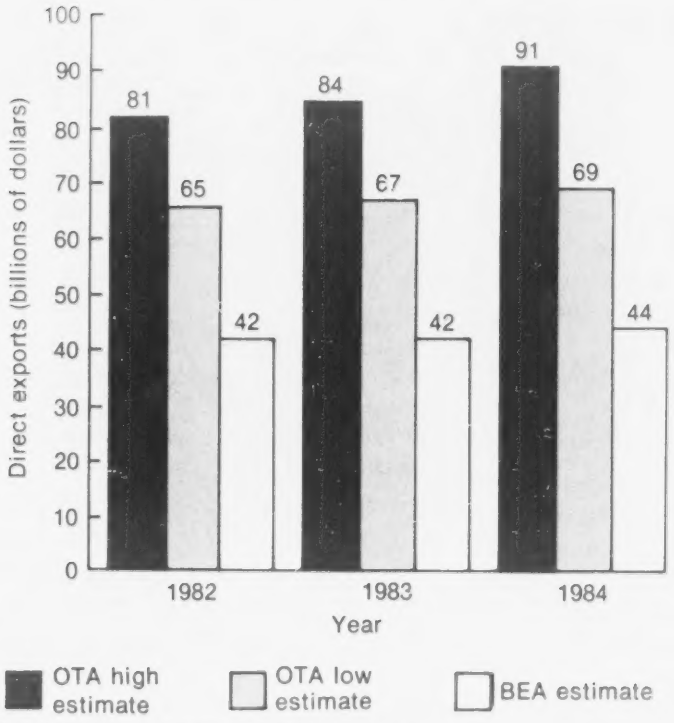
[a]Excluding banking; see ch. 4 of the special report for explanations of coverage.
[b]Based on midrange of OTA estimates for exports and imports.

SOURCE: Office of Technology Assessment

(BEA), reflect errors of similar magnitude for 1982 and 1983 (figures 1 and 2). OTA's midrange estimates suggest that the current account understated the U.S. service surplus (i.e., net exports) by $11 billion in 1982 and 1983, and $12 billion in 1984.

3. *Trade in services made a significant positive contribution to the U.S. balance of payments over the years 1982 to 1984.* OTA's midrange estimates suggest a 1984 surplus on services of roughly $14 billion. While much greater than the official balance of payments figure for services—a surplus of slightly more than $2 billion—the Nation's 1984 deficit of $114 billion on trade in goods far overshadows net service exports. Both the BEA's figures and OTA's estimates show a decline in the services surplus over the period 1982-84 (figure 3).
4. OTA estimates that U.S. service exports (again excluding banking services and services bundled with goods) came to $65 to $81 billion in 1982, $67 to $84 billion in 1983, and $69 to $91 billion in 1984 (table 2). As table 1 indicates, *sales of services in foreign markets by the overseas affiliates of American firms exceed direct exports of services.*

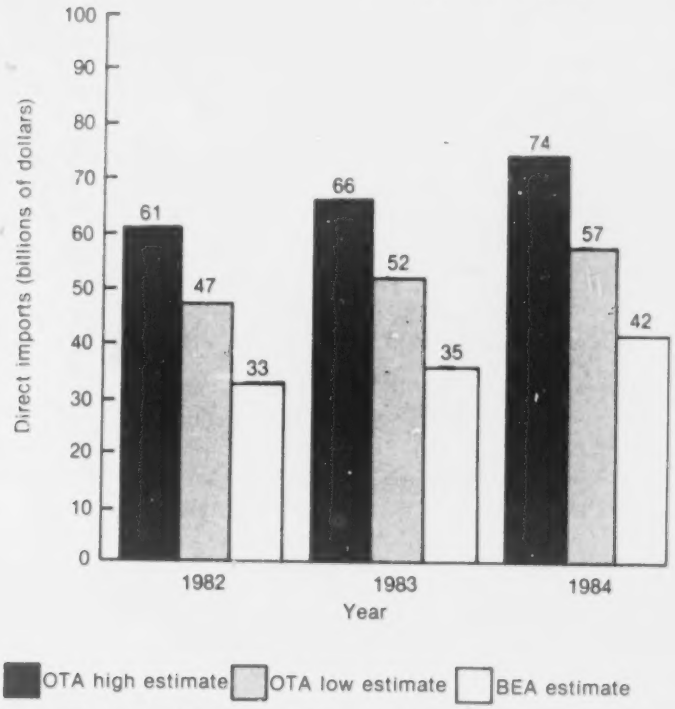
Figure 1.—U.S. Service Exports, 1982-84



NOTE: All estimates rounded to nearest billion dollars.

SOURCES. **OTA estimates**—Table 4 of the special report. **BEA estimates**—R.C. Krueger, "U.S. International transactions, First Quarter 1985," *Survey of Current Business*, June 1985, pp. 34-71.

Figure 2.—U.S. Service Imports, 1982-84



NOTE: All estimates rounded to nearest billion dollars.

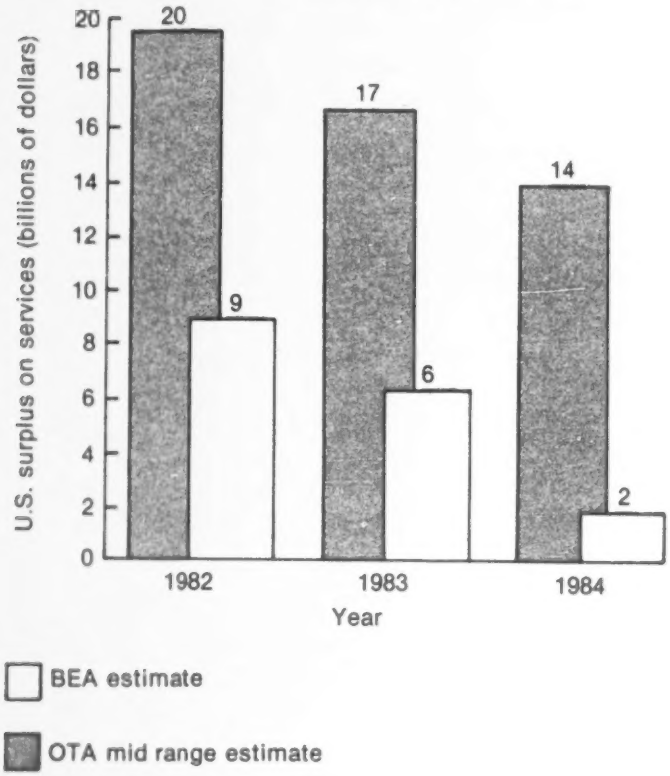
SOURCES: **OTA estimates**—Table 4 of the special report. **BEA estimates**—R.C. Krueger, "U.S. International transactions, First Quarter 1985," *Survey of Current Business*, June 1985, pp. 34-71.

U.S. affiliates overseas had sales totaling an estimated $92 to $102 billion in 1982 and $87 to $97 billion in 1983. (Figures for 1984 could not be estimated; the apparent decline in sales from 1982 to 1983 in part reflects rises in the value of the dollar relative to local currencies, rather than declines in foreign sales measured in those local currencies.) Similarly, service sales in the United States by affiliates of foreign firms substantially exceeded the Nation's direct imports of services. OTA estimates direct imports at $52 to $66 billion in 1983 and $57 to $74 billion in 1984, with service receipts of the U.S. affiliates of foreign firms coming to $69 to $75 billion in 1983.

5. The leading services exported directly from the United States were transportation services, travel services, construction, and licensing. OTA estimates that these sectors as a group accounted for 63 percent of U.S. nonbank service exports in 1982, 58 percent in 1983, and 57 percent in 1984.

   Transportation services, travel, and insurance accounted for the bulk of U.S. imports of services over 1982 to 1984, nearly three-quarters of the Nation's direct imports of nonbank services during these years.

Figure 3.—U.S. Balance of Payments Surplus in Services, 1982-84



NOTE: All estimates rounded to nearest billion dollars.

SOURCES: **OTA estimates**—Table 4 of the special report. **BEA estimates**—R.C. Krueger, "U.S. International transactions, First Quarter 1985," *Survey of Current Business*, June 1985, pp. 34-71.

6. While direct exporting is common in some service industries, in others, sales through foreign affiliates are far more important. The 22 service categories OTA has examined can be divided into three groups: those in which most or all foreign revenues are generated by direct exports (including travel, educational and legal services, and technology licensing); those in which most or all were generated by sales through affiliates (including insurance, accounting, and advertising); and those in which both direct sales and affiliate sales contributed significantly to total foreign revenues (including transportation, construction, consulting, and computer software).
7. For most U.S. service industries, like most goods industries, domestic output far outstrips foreign revenues. Prominent examples include construction, health services, and education. While thousands of companies (or other providers) populate most of the service industries, in many cases a few large firms generate most of the foreign revenues—whether these result from direct exports or sales by affiliates.

Table 2.—OTA Estimates of Service Balance of Payments, 1982-84[a]

	Exports (receipts) (billions of dollars)			Imports (payments) (billions of dollars)			Net exports[b] (billions of dollars)		
	1982	1983	1984	1982	1983	1984	1982	1983	1984
Accounting	$0.2-0.5	$0.2-0.5	$0.2-0.5	—[c]	—[c]	—[c]	$0.2 - 0.5	$0.2 - 0.5	$0.2 - 0.5
Advertising	0.1-0.5	0.1-0.5	0.1-0.5	—[c]	—[c]	—[c]	0.1 - 0.5	0.1 - 0.5	0.1 - 0.5
Construction	5.6	4.8	4.0-6.0	0.0-2.2	0.0-1.7	0.0-2.0	3.4 - 5.6	3.1 - 4.8	2.0 - 6.0
Data processing	0.1-1.2	0.1-1.2	0.1-1.2	0.0-2.0	0.0-2.0	0.0-2.0	(1.9)- 1.2	(1.9)- 1.2	(1.9)- 1.2
Education	1.5-2.2	1.6-2.3	1.8-2.5	0.1-0.3	0.1-0.3	0.1-0.3	1.2 - 2.1	1.3 - 2.2	1.5 - 2.4
Engineering	1.2-1.7	1.1-1.6	1.0-1.4	0.1-0.3	0.1-0.3	0.1-0.3	0.9 - 1.6	0.8 - 1.5	0.7 - 1.3
Franchising	0.2-1.0	0.2-1.1	0.2-1.2	—[c]	—[c]	—[c]	0.2 - 1.0	0.2 - 1.1	0.2 - 1.2
Health	1.0-2.5	1.0-2.5	1.0-2.5	—[c]	—[c]	—[c]	1.0 - 2.5	1.0 - 2.5	1.0 - 2.5
Information	0.0-2.6	0.0-2.9	0.0-3.1	0.0-1.0	0.0-1.0	0.0-1.0	(1.0)- 2.6	(1.0)- 2.9	(1.0)- 3.1
Insurance	5.6-7.7	6.1-8.2	6.9-9.1	6.3-8.6	6.7-9.1	7.4-9.8	(1.1)-(0.5)[d]	(1.1)-(0.4)[d]	(0.9)-(0.2)[d]
Investment banking/ brokerage	2.1-4.8	3.2-6.4	3.2-8.5	3.6-4.1	4.3-4.8	4.3-5.6	(2.0)- 1.2	(1.6)- 2.1	(2.4)- 4.2
Leasing	0.2-1.2	0.2-1.2	0.2-1.2	0.0-1.0	0.0-1.0	0.0-1.0	(0.8)- 1.2	(0.8)- 1.2	(0.8)- 1.2
Legal	0.0-2.0	0.0-2.0	0.0-2.0	0.0-1.0	0.0-1.0	0.0-1.0	(1.0)- 2.0	(1.0)- 2.0	(1.0)- 2.0
Licensing	5.2	5.2	5.5	0.7	0.8	1.0	4.5	4.4	4.5
Management/ consulting	0.5-1.1	0.6-1.4	0.6-1.6	0.6-1.1	0.6-1.1	0.6-1.1	(0.6)- 0.5	(0.5)- 0.8	(0.5)- 1.0
Motion pictures	1.6	1.9	1.9	0.1-1.4	0.1-1.7	0.2-2.7	0.2 - 1.5	0.2 - 1.8	(0.8)- 1.7
Retailing	—[c]	—[c]	—[c]	—[c]	—[c]	—[c]	—[c]	—[c]	—[c]
Software	1.6-1.7	2.5-2.6	2.8-2.9	0.0-1.7	0.0-2.2	0.0-2.7	(0.1)- 1.7	0.3 - 2.6	0.1 - 2.9
Telecommunications	1.1	1.3	1.3	1.9	2.0	2.4	(0.8)	(0.7)	(1.1)
Transportation	16.7	17.1	18.5	17.7	19.1	22.8	(1.0)	(2.0)	(4.3)
Travel	15.7	14.1	13.7	13.7	15.8	16.4	2.0	(1.7)	(2.7)
Miscellaneous	4.7	5.3	5.7	1.8	1.9	2.1	2.9	3.4	3.6
OTA total	$65-81	$67-84	$69-91	$47-61	$52-66	$57-74	$6.3 - 32.8[d]	$2.7 - 30.7[d]	$(3.5) - 31.5[d]
OTA mid-range estimate	$73	$76	$80	$54	$59	$66	$20	$17	$14
[BEA total	$41.7	$41.8	$43.8	$32.6	$35.4	$41.5	$ 9.1	$ 6.4	$ 2.3]

[a]Commercial banking is excluded from this table, for reasons discussed on p. 40 of the special report.
[b]Parentheses indicates negative balance.
[c]Negligible.
[d]Range of estimates for net exports not that implied by ranges for exports and imports, for reasons explained on p. 76 of the special report.

SOURCES: **OTA estimates**—ch. 5 of the special report; **BEA estimates**—*Survey of Current Business*, various issues.

For instance, domestic revenues of the roughly 50,000 U.S. accounting establishments came to about $19 billion in 1984, with OTA's estimates of foreign revenues totaling $4.1 to $4.7 billion. Of these foreign revenues, almost all were accounted for by affiliates of U.S. accounting firms, rather than exports, and almost all of these affiliates were associated with the "Big Eight" U.S. firms. Such observations suggest that liberalization of trade and investment in the services will, in at least some industries, benefit primarily the small number of large firms with substantial overseas activities.

POLICY IMPLICATIONS

Given the historical trends and modes of production characteristic of most service industries, exports of services can be expected to make a modest positive contribution, over the foreseeable future, to the U.S. balance of payments. But even though trade in services will remain small compared with trade in goods, the services are of considerable importance internationally. In some cases—e.g., engineering and construction contracts—exports of goods may follow from sales of services. In other cases, American service firms have followed American manufacturers overseas. High-technology goods exports, almost by definition, embody high service content in forms such as engineering or other professional knowledge. Linkages between overseas sales of goods and services, already strong, will grow as American companies seek new international business strategies, approaching their markets in

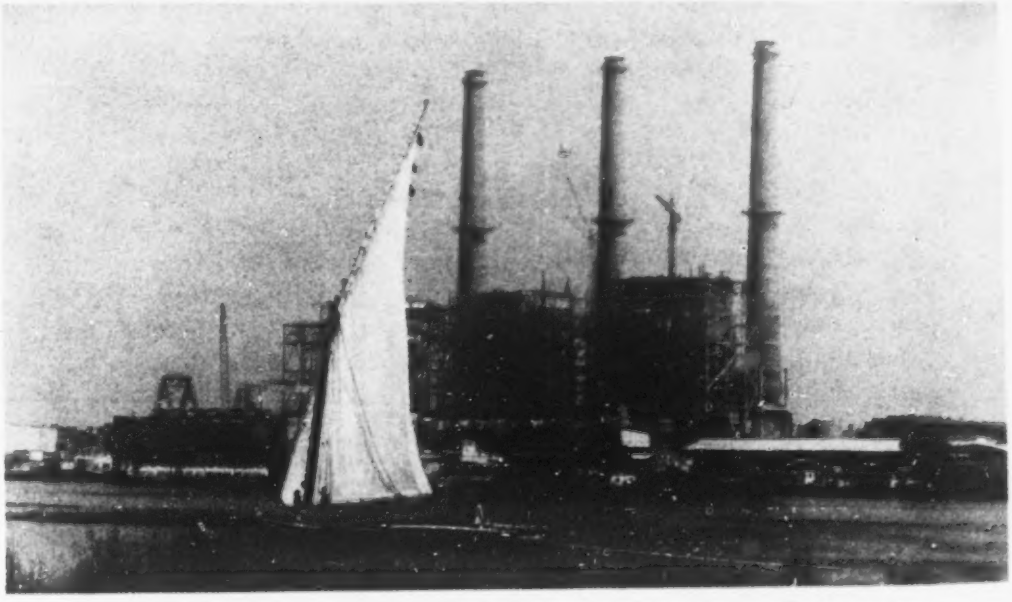


Photo credit: Bechtel Power Corp.

The Shoubrah El-Kheima generating plant, being built for the Egyptian Electricity Authority by an American construction company.

global rather than national terms. In view of such trends, improving the system for collecting and analyzing data on services trade could help government policymakers evaluate future prospects for U.S. industries and develop effective negotiating strategies both bilaterally and in multilateral forums such as the General Agreement on Tariffs and Trade (GATT).

For reasons inherent in the production of services, U.S.-based firms will continue to do more overseas business through foreign establishments than through direct exporting of services. While foreign investment may be of great importance to particular companies, this does not necessarily make it vital for U.S. economic interests as a whole. Sometimes the indirect and strategic importance of foreign affiliates will be high.[2] Overseas offices of U.S. banks aid in exports of manufactures. When an American company manages an overseas construction project, indirect benefits to the U.S. economy may greatly exceed those that can be directly traced to the contract. But in general, when U.S.-based firms invest in overseas affiliates in the services, these affiliates are staffed by local people and purchase in the local market; they may have little if any relation to economic activities within the United States. Exports from the United States and overseas revenues of affiliates should not be confused, nor should their potential benefits to the Nation's economy.

At present, the Federal Government does not collect enough statistical data on trade and investment in services to address such matters in much detail—e.g., the balance of interests at stake when offering concessions on trade in goods in exchange for relaxed barriers on services trade. Certainly the database seems inadequate to support negotiations during a long-running and complex round of trade talks—a problem acknowledged by the United States during the early stages of preparations for the forthcoming GATT round.[3] Perhaps most important, even given adequate data, the Federal Government may not possess the analytical expertise to define objectives, weigh possible trade-offs, and develop effective alternative negotiating positions over the course of the upcoming trade round.

Consider, specifically, the decision by the United States prior to the 1982 GATT Ministerial to place a high priority on services in the next round—a decision taken in the midst of a period of deterioration in the ability of the world trading system to manage the impacts on trade

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[2]This question will be analyzed in greater detail in OTA's forthcoming report *International Competition in the Service Industries*.

[3]See, for example, "U.S. National Study on Trade in Services: A Submission by the United States Government to the General Agreement on Tariffs and Trade," prepared under the direction of the Office of the United States Trade Representative, Washington, DC, December 1983, p. 172.

The deficiencies in Federal Government data on trade and investment have been of concern to Congress for a number of years. See, for example, "Responses to Written Questions Submitted by Senator Roth," *Government Organization for Trade*, hearing, Committee on Governmental Affairs, U.S. Senate, June 4, 1981, p. 24. More recently, Title III of the Trade and Tariff Act of 1984 (Public Law 98-573) specifically authorized the President to collect and analyze data on U.S. trade in services. For a summary of executive branch authority and duties, see 22 U.S.C. sec. 3101 (1986).

in goods of nontariff barriers, bilateralism, and the national industrial policies that have become standard in many parts of the world. Would a better grasp of the prospects for U.S. exports of services have led to a different approach to the new round? Certainly the poor quality and coverage of the data impair the ability of policymakers to gage the importance of services trade—as a whole, on a sector-by-sector basis, or bilaterally.

The very large uncertainties in the data—illustrated by the ranges in figures 1 and 2—make it more difficult to design effective negotiating strategies as well as to weigh trade-offs among objectives. Note that, while the midrange estimates in table 1 offer a reasonable basis for comparisons with official statistics, the data are so poor and the uncertainties so large that OTA cannot even state with complete confidence that BEA's balance of payments figures understate rather than overstate the Nation's net exports of services. (The extremes of OTA's estimates for the 1984 services balance range from a deficit of $4 billion to a surplus of $32 billion, table 2, while the BEA figure is a $2.3 billion surplus.) Furthermore, because exports and imports affect calculations of gross national product and related macroeconomic statistics, errors in the balance of payments data reduce the accuracy of BEA estimates here as well. Improvements now could aid U.S. trade negotiators while the new trade round is underway, and into the future.

Although the responsible agencies have been making progress in improving the services database, this progress has been slow. Budgetary constraints and reluctance to impose additional reporting requirements on businesses are legitimate concerns, but OTA's analysis suggests that substantial improvements in the accuracy of the data would be possible without much additional cost to either the Federal Government or the private sector. The benefits of better analytical understanding of trade and investment in the services, and their impacts on other parts of the economy, should far outweigh additional costs.

The remainder of this summary outlines alternative approaches to improving the statistics. Table 3, which outlines the principal weaknesses in current procedures, provides the logical framework for improvements. Possible steps include:

1. *Implement the Proposed BE-20 Survey.*— As discussed in chapter 3 of the special report, BEA has proposed a new benchmark survey, BE-20, of unaffiliated service transactions to fill some of the major gaps in the data now collected. This survey was rejected by the Office of Management and Budget (OMB) for reasons involving both the anticipated burden on respondents and BEA's methods of developing the survey. Implementation of such a survey, perhaps in modified form, along with annual sample surveys thereafter, would help eliminate what is perhaps the greatest deficiency in current services data coverage. If the reasons cited by OMB in rejecting BE-20 are judged to outweigh the benefits such a survey would provide, it should be possible to redesign the sur-

Table 3.—Summary of Deficiencies in BEA Database

Type of problem	Travel	Passenger fares	Transport	Affiliated fees and royalties	Unaffiliated fees and royalties	Miscellaneous private services	Other direct private transactions	investment data
Voluntary survey/low response rate	Voluntary "mail-in" response[a b]		Low response for U.S. freighters[a]			Low response on technical services[a]		
Surveys old or out of date		1975 survey for ocean passengers					Portfolio income estimated from 1942 benchmark[a]	
Other methodological problems	Nonrandom survey distribution[a b]					Survey BE-47 voluntary[a b]		No annual outbound data before 1982
Inherent problems in assigning value to transactions			Trucking cannot be measured	Values reflect bookkeeping considerations	Exchanges not assigned values			Inherent problem in affiliated transactions
Highly aggregate data presentation				Estimated on net basis[b]	Limited detail by industry or country	Poor data quality prevents disaggregation	Poor data quality prevents disaggregation	
Gaps in coverage			Land freight (trucking)		Exchanges	Many services not covered[a]	Individual portfolios; bank fees[a]	Minority affiliates; service purchases
Commingling of distinct items	Land travelers' passenger fares included	Port services included in transport account				Several distinct services combined	Lumping of bank services with investment earnings	

[a]May have significant balance-of-payments ramifications.
[b]BEA taking steps to improve data.

SOURCE: Office of Technology Assessment.

vey to provide useful, if more limited data, while reducing the costs for businesses surveyed.

2. *Implement a Truncated Version of BE-20, Focusing on a Limited Number of the Most Important Industries.*—If OMB's objections cannot be satisfied by a redesigned BE-20 survey, a less ambitious survey could nevertheless give needed information on unaffiliated service transactions. By including only those service industries expected to account for large volumes of such transactions, the uncertainties in the balance of payments could be substantially reduced. A less than comprehensive survey would not fill all the gaps in BEA's database, but would be far better than the present situation.

While one purpose of a benchmark survey such as BE-20 is to identify which industries are, in fact, the most significant in terms of international trade, OTA's estimates indicate that a few categories account for the bulk of service exports and imports. (As the industry summaries in ch. 5 of the special report demonstrate, data on imports of services are particularly poor.) These industries could be surveyed with a truncated version of BE-20, followed by annual sampling of the universe of firms. Based on OTA's work, a list of services to be surveyed should include at a minimum banking (if not dealt with elsewhere —see below), insurance,

Photo credit: World-Wide Photo

American soft drinks are bottled in many parts of the world under franchise arrangements.

computer software, and investment banking and brokerage services. In combination with better versions of existing surveys on transportation, travel, and engineering and construction, a large fraction of U.S. trade in services could be covered. In addition, services currently experiencing rapid international growth (management consulting, information services, health care) could be considered for inclusion.

3. *Expand the Nonresident Questionnaire in the Census of Service Industries.*—The Commerce Department's 1982 Census of Service Industries included, for the first time, questions on sales by U.S. firms to nonresidents. Establishments in four industry groups were asked: whether any portion of their sales were to nonresidents; whether these receipts were included in total receipts reported in the Census; and, if so, the level of those receipts. (The four industry groups were: computer and data processing services; engineering, architecture, and surveying; management, consulting, and public relations services; and equipment rental and leasing.) Continuing this line of questioning in the next Census, scheduled for 1987, and perhaps expanding it to include more service industries, would provide information not currently collected by any Federal agency.

   While data at the 5-year Census intervals provides no more than a limited tool for analysis (e.g., of competitiveness), such information is needed to help identify sectors experiencing rapid growth internationally. To get the most from such questionnaires, care must be exercised in selecting the industries to cover; the 1982 results for both data processing and computer services and equipment rental and leasing appear to greatly understate the level of trade because establishments whose major business falls in some other industry category account for a large fraction of receipts (e.g., equipment leasing by banks).

4. *Improve the Data on International Banking.*—Poor data has prevented BEA from including banking as a separate line item in the balance of payments—a major deficiency, given the size and importance of the international banking industry. Banking transactions are currently lumped together with nonservice invisible transactions (see ch. 3 of the special report) such as income from portfolio investments. Also because of poor quality data, OTA has been unable to estimate the share of international banking activity accounted for by direct trade as opposed to affiliate sales.

   American banks report information on international transactions to the Federal Reserve Board (FRB). With minor modifications, these data should be sufficient to calculate banking exports. However, the government does not collect comprehensive data on the revenues of foreign banks operating in the United States. While it is probably impossible to compile complete data on banking service imports from the foreign offices of foreign banks, the FRB currently monitors on a quarterly basis the asset

levels of the U.S. offices of these banks. The Board could presumably extend these surveys to receipts. This would be particularly useful for fee-based services, on which almost no information now exists.

Another option for improving banking data would be to include banks in the benchmark and annual BEA surveys of inbound and outbound direct investment. (Banks are now covered by a much more limited BEA survey.) To avoid duplication, such a step would have to be coordinated with current FRB data-collection efforts, but it could provide needed information on parent-affiliate transactions, particularly of foreign-owned U.S. banks, and other aspects of international banking operations.

5. *Survey U.S. Holders of Foreign Securities.*—As indicated in chapter 3 of the special report, estimates of portfolio investment income (income from holdings totaling less than 10 percent of a foreign firm's equity) are currently based on extrapolations of a survey conducted more than 40 years ago. Although the Treasury Department has concluded that comprehensive coverage of U.S. holders of foreign securities would be prohibitively expensive, a narrower survey—e.g., of banks, brokerage houses, mutual funds, and other major participants in foreign securities markets—would be a great improvement.
6. *Survey Purchases of Services by Affiliates.*—Enhancements to the service portions of the inbound and outbound direct investment surveys have provided much more information on sales of services by the overseas affiliates of U.S. firms and by the U.S. affiliates of foreign firms. Nonetheless, there is still no coverage of purchases of services by affiliates. As a result, it is impossible to determine whether firms located in the United States purchase the services they require as inputs to production here or import them (from an overseas parent, from other affiliates of the parent firm, or from unaffiliated firms).

   This question is particularly important in the context of trade negotiations, because such transactions (e.g., involving R&D or management services) may have major impacts on competitiveness in manufacturing as well as service industries. Because it could prove difficult for firms to provide this information, depending on accounting practices, BEA might begin by exploring the possible addition of questions on service purchases to its direct investment surveys in order to determine whether this would be an unreasonable burden on respondents. (Some firms might also resist such disclosures.)
7. *Expand the Inbound Direct Investment Survey.*—At present, the Federal Government collects less information on the direct investments of foreign firms in the United States than on the overseas holdings of American firms. The shortcomings in the data on inward investment make it difficult to estimate service imports from overseas parents as well as exports from U.S. affiliates either to

parent firms or to other trading partners. The next inbound investment benchmark survey, scheduled for 1987, would be more useful if the U.S. affiliates of foreign firms were asked for information on transactions with the parent, and on the distribution of their sales between U.S. and foreign markets.

8. *Expand the Use of Data from Sources Outside the Federal Government.*—As chapter 5 of the special report indicates, much useful but unofficial data on international trade in services exists—e.g., industry surveys, estimates compiled by trade associations. *Advertising Age*'s annual surveys, for instance, proved quite useful for OTA's estimates, while in recent editions of the *U.S. Industrial Outlook*, the Commerce Department has increased its use of private sector data, particularly for international trade.[4]

   The quality of such data varies greatly. Private sector sources will seldom be adequate substitutes for government statistics, and must always be used with discretion. Nonetheless, they are better than nothing; OTA has been forced to rely heavily on private sector data sources in its previous assessments of international competitiveness. So long as steps have been taken to ensure reasonable reliability in the original database—a noteworthy example being *Advertising Age*'s recent decision to request accountant certification from responding firms—these can be useful supplements to official government data.

   One way to provide markedly better data on services trade would simply be to charge BEA or some other Federal agency with making ongoing "best-estimate" compilations following procedures similar to those OTA has used in preparing this report. Such a departure from normal government practices would need to be approached with care—in part because it might establish unfortunate precedents (e.g., leading to curtailment rather than enhancement of the government's own efforts). But with experience, and continued refinements in technique, the database could be improved relatively quickly even in the absence of new surveys.

   Much of the private sector data are limited to worldwide totals, rather than country-by-country figures. Trade negotiators, as well as analysts, typically need country-specific data. Should the government begin to use more data from unofficial sources, the responsible agencies could work with those collecting the data to seek country-by-country disaggregation.

[4]While the International Trade Administration, charged with preparing the *Outlook*, has broadened and deepened its coverage for both goods and services through such means, further progress is certainly possible; perhaps the greatest need is for more careful and consistent distinctions between sales by foreign affiliates and direct trade.

9. *Alert Users to Shortcomings in the Database, While Also Informing Users of Data in Which They Can Place Confidence.*—In the *Survey of Current Business*, and elsewhere, balance of payments figures for the services based on information collected directly (i.e., on the same basis as for goods crossing the Nation's borders) could be segregated from those based on surveys. Furthermore, the survey data could be presented in two or more categories, with that based on universal surveys segregated from that based on sample surveys. By clearly identifying extrapolations from limited, out-of-date, or otherwise poor quality samples, users would know when they could presume that the figures presented were reasonably accurate and when they were speculative; indeed, with little additional effort, BEA should be able to place error bands on its more tentative figures.
10. *Hasten Revisions of the SIC Code, and Update the Code More Frequently.*—The Standard Industrial Classification (SIC) system, which provides the framework for a great deal of the Federal Government's information on production, employment, and trade, is currently being revised—a long overdue set of revisions, the first since 1972. (Currently, for example, nearly all computer systems, from personal computers to the largest supercomputers—some $60 billion in U.S. output during 1985—fall in a single category, SIC 357311.) Rapid structural shifts in the U.S. economy mean that, if the SIC system is to remain useful for analytical purposes, it will have to be revised at more frequent intervals than in the past (while preserving historical continuity).

    While SIC revisions will not directly affect balance of payments figures, the new categories will have major impacts on the organization and presentation of many types of service industry data, including that on revenues, employment, wages, and capital expenditures. Over-aggregation of existing services data creates serious problems for analysts and policymakers. Decisions on service categories in the SIC codes need careful consideration; they will have long-term impacts on our ability to understand and respond to ongoing shifts in the structure of the U.S. economy.

It would make little sense to take some of the steps outlined above—e.g., to make greater use of data from nongovernment sources—unless these steps were accompanied by a greater effort on the part of Federal agencies to critically analyze and evaluate the data they compile and present. To use nongovernment data sources effectively means to acknowledge the errors and uncertainties in the official data and seek practical remedies, rather than continue with outdated and conceptually flawed procedures. For BEA to prepare "best-estimates," rather than report data that seem precise but that may be subject to large errors, would represent a substantial change in direction for the agency. Nonetheless, OTA suggests that, given the rapid changes taking place in the U.S. and world economies, it may be appropriate to acknowl-

edge more bluntly the uncertainties and other flaws in the existing database, and move toward a set of categories and estimating procedures that are conceptually correct and more useful analytically. This would be a major step toward building a database that could support ongoing analysis of the international competitive position of U.S. industries, and thereby provide policymakers with the kind of information they need.

NOTE: Copies of the special report "Trade in Services: Exports and Foreign Revenues" can be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402, GPO stock No. 052-003-01049-6.

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